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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,125	07/08/2003	Shinsuke Ito	116439	6030
25944	7590	03/22/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,125	ITO ET AL.	
	Examiner	Art Unit	
	Andrew T. Sever	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7, 8, 12/2003</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claims 1-8 are objected to because of the following informalities: claim 1 claims a relationship between the disposition of the inlet of the fan and the optical path plane, however it is not clear what the plane would be. Appropriate correction is required.

Although optical paths are generally drawn as either being lines (1D) or planes (2D), in general the path the light travels in is a 3 dimensional (3D) volumetric area (it has thickness) and therefore a claim of a disposition relative to a plane must be defined relative certain components that can be used to define an actual plane under ordinary mathematical rules. For purposes of a prior art rejection the orientation of the fan with respect to the optical path will be inferred from figure 9 of applicant's drawings which appears to show the axis of rotation of the centrifugal fan to be parallel to a plane cut across the projector rather than being in an up and down direction relative to the bottom casing. See for example US 6,422,703 to Wang, which in figure 5 has a plurality of fans with the same orientation.

Claims 2-8 are dependent on claim 1 and are objected to due to their dependency on claim 1 as well as similar errors.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 only claims that the fan is closer to the light source device, however the use of the term closer requires after device the phrase “than ____”. Since the claim does not distinctly point out where the inlet must be disposed (the inlet in applicant’s drawings is closer to the light source device than many other components so no determination can be made which particular one applicant is choosing), no prior art rejection can be provided. Applicant is advised to review the cited prior art to determine if any meets the intended limitation before amending claim 3 to overcome this rejection.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Konuma et al. (US 2001/0008439.)

Konuma teaches in figure 12 a projector comprising:

A light source device (3);

An optical modulator (14, 18, and 21) that modulates light flux emitted from the light source device according to image information;

A projection optical system (27) that projects the light flux modulated by the optical modulator in an enlarged manner; and

An exhaust fan (61) that exhausts air inside the projector outside,

The exhaust fan being a centrifugal fan that exhausts the air sucked from the direction of a rotary shaft of the fan in the tangential direction of the rotation, and

An inlet of the centrifugal fan disposed along a plane orthogonal to the optical path plane formed by the light source device, the optical modulator, and the projection optical system.

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With regards to applicant's claim 4:

The fan is disposed between the lamp 3 and a control board/power supply board (with part 63 on it)

With regards to applicant's claim 5:

The fan (61) is placed on one end of the block while both fans 63 and 62 are on opposite ends relative to the fan (61).

With regards to applicant's claim 8:

The components of the projector are disposed in an U-shape.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konuma as applied to claims 1, 4, 5, and 8 above, and further in view of Wang (US 6,422,703).

As described in more detail above Konuma teaches a projector, which among other things has a centrifugal fan, however Konuma's centrifugal fan is not disposed in an inclined manner to an optical axis of the illumination of the light flux. Such an inclination is taught in figure 5 of Wang where fan 47 is inclined. Wang teaches in column 4 lines 33-

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48 that this disposition helps reduce noise. Given it is desirable to reduce noise in projectors, it would have been obvious to one of ordinary skill in the art to dispose the centrifugal fan so that it is in an inclined manner as taught by Wang in the projector of Konuma.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konuma as applied to claims 1, 4, 5, and 8 above, and further in view of Ohishi et al. (US 6,641,267.)

As described in more detail above, Konuma teaches a centrifugal fan and further teaches an intake fans, an exhaust fan and corresponding outlets (62, 63, and 50), which exhaust the air moved by the centrifugal fan out of the projector (52). However, the outlet of both the inlet ports and outlet ports and corresponding fans are not disposed in an inclined manner. Ohishi teaches such ports in figure 1 (all fans and ports are inclined relative to each other and the principle optical axis P2.) Ohishi teaches in column 5 lines 36-67 that this has the advantage that distortion is not introduced into the projected image by the exhausting hot air as well the required structure is reduced. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the ports and fans inclined as taught in Ohishi in the projector of Konuma.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,618,213 to Inamoto teaches in figure 4 a projector with a centrifugal fan 70.

US 6,280,038 to Fuse et al. teaches in figure 8 a projector that can meet some of applicant's claims.

US 6,065,838 to Konuma et al. teaches inclined fans in figure 1.

US 6,840,628 to Arai et al. teaches in figure 4 fans that meet at least applicant's claim 1.

US 6,481,854 to Sugawara et al. teaches various dispositions of fans.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER